

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1-33. (Canceled)

34. (Previously Presented) A computer-implemented method for determining customer service impact, comprising:

receiving item orders having a requested completion date;

scheduling a scheduled completion date for each item order;

selecting at least one item order, each item order having a scheduled completion date;

comparing the scheduled completion date with the requested completion date for each selected item order, wherein said comparing comprises:

generating a demand array of item orders;

generating a supply array of manufacturing inventory;

selecting an item order in the demand array;

matching manufacturing inventory in the supply array with the selected item order; and,

comparing the scheduled completion date of an item in the supply array with the requested completion date for the matched item in the demand array; and

deriving a customer service measurement for each selected item order based on said comparing, the customer service measurement comprising the amount of time difference between the requested completion date and a scheduled completion date multiplied by the value of the item order and multiplied by a predetermined interest rate.

35. (Previously Presented) A computer-implemented method for determining customer service impact, comprising:

receiving item orders having a requested completion date;  
scheduling a scheduled completion date for each item order;  
selecting at least one item order, each item order having a scheduled completion date;  
comparing the scheduled completion date with the requested completion date for each selected item order, wherein said comparing comprises:

generating a demand array of item orders;  
generating a supply array of manufacturing inventory;  
selecting an item order in the demand array;  
matching manufacturing inventory in the supply array with the selected item order; and,

comparing the scheduled completion date of an item in the supply array with the requested completion date for the matched item in the demand array; and

deriving a customer service measurement for each selected item order based on said comparing, the customer service measurement comprising a measurement of at least one of time and money;

identifying a subset of work orders having a customer service measurement greater than a predetermined threshold; and

performing at least one of a utilization, contention, and material constraint inquiry on the subset of work orders.

36. (Previously Presented) The method of claim 35, further comprising:

identifying as a potential bottleneck a material or resource having the greatest result in the at least one of a utilization, contention, and material constraint inquiry.

37. (Previously Presented) A system for determining customer service impact, comprising:

a receiver for receiving item orders having a requested completion date;

a scheduler for scheduling a scheduled completion date for each item order;

a selector for selecting at least one item order, each item order having a scheduled completion date;

a comparator for comparing the scheduled completion date with the requested completion date for the selected item orders, wherein the comparator further comprises:

a first generator for generating a demand array of item orders;

a second generator generating a supply array of manufacturing inventory;

a selector for selecting an item order in the demand array;

a matching subsystem for matching manufacturing inventory in the supply array with the selected item order;

a comparator for comparing the scheduled completion date of an item in the supply array with the requested completion date for the matched item in the demand array; and

a measurement subsystem for deriving a customer service measurement, the customer service measurement comprising the amount of time difference between the requested completion date and a scheduled completion date, multiplied by the value of the item order and multiplied by a predetermined interest rate.

38. (Previously Presented) A system for determining customer service impact, comprising:
- a receiver for receiving item orders having a requested completion date;
  - a scheduler for scheduling a scheduled completion date for each item order;
  - a selector for selecting at least one item order, each item order having a scheduled completion date;
  - a comparator for comparing the scheduled completion date with the requested completion date for the selected item orders, wherein the comparator further comprises:
    - a first generator for generating a demand array of item orders;
    - a second generator generating a supply array of manufacturing inventory;
    - a selector for selecting an item order in the demand array;
    - a matching subsystem for matching manufacturing inventory in the supply array with the selected item order;
    - a comparator for comparing the scheduled completion date of an item in the supply array with the requested completion date for the matched item in the demand array;
    - a measurement subsystem for deriving a customer service measurement, the customer service measurement comprising at least one of time and money, for each selected item order based on the comparison;
    - a selector for identifying a subset of work orders having a customer service measurement greater than a predetermined threshold; and
    - a measurement subsystem for performing at least one of a utilization, contention, and material constraint inquiry on the subset of work orders.

39. (Previously Presented) The method of claim 38, further comprising:

a selector for identifying as a potential bottleneck a material or resource having the greatest result in the at least one of a utilization, contention, and material constraint inquiry.

40 – 51 (Canceled)

52. (Withdrawn) A computer-implemented method for optimizing scheduling operation based on customer service impact, comprising:

receiving customer line item orders, each having a requested completion date, wherein each customer line item is an individual customer requested product for purchase; selecting at least two scheduling operations from a list of predetermined scheduling operations;

scheduling a scheduled completion date for each item order based on each of the selected scheduling operations;

selecting at least one item order, each item order having scheduled completion dates determined by each of the selected scheduling operation;

comparing each of the scheduled completion dates with the requested completion date for each selected item order, wherein said comparing comprises:

generating a demand array of item orders;

generating a supply array of manufacturing inventory;

selecting an item order in the demand array;

matching manufacturing inventory in the supply array with the selected item order; and

comparing the scheduled completion date of an item in the supply array with the requested completion dates for the matched item in the demand array;

deriving by a computer a customer service measurement for each selected item order for each selected scheduling operation based on said comparing, the customer service measurement comprising a measurement of at least one of the value of time and money; and determining an overall customer service measurement for each of the selected scheduling operation based on the customer service measurement for each item order.

53. (Withdrawn) The method of claim 52 further comprising:  
comparing the overall customer service measurement for each selected scheduling operation; and  
determining the selected scheduling operation that produces the least overall customer service measurement.

54. (Previously Presented) A computer-implemented method for quantitatively determining customer service impact of scheduling changes, comprising:  
receiving customer line item orders, each having a requested completion date, wherein each customer line item is an individual customer requested product for purchase;  
scheduling a scheduled completion date for each item order;  
selecting at least one item order, each item order having a scheduled completion date;  
comparing the scheduled completion date with the requested completion date for each selected item order, wherein said comparing comprises:  
generating a demand array of item orders;  
generating a supply array of manufacturing inventory;  
selecting an item order in the demand array;  
matching manufacturing inventory in the supply array with the selected item order; and  
comparing the scheduled completion date of an item in the supply array with the requested completion date for the matched item in the demand array; and

deriving a customer service measurement for each selected item order based on said comparing, wherein the customer service measurement represents values calculated based on one or more formulas selected from the group consisting of:

the amount of time difference between the requested completion date and a scheduled completion date multiplied by the value of the item order and multiplied by a predetermined interest rate;

a value of a late item order, determined by multiplying a number of late item orders by a unit price per item order, then subtracting any commission and discount; and

a value-time late, determined by multiplying a time difference between the requested completion date and the scheduled completion date multiplied by a value of the item order.

55. (Previously Presented) The method of claim 54, wherein the method is implemented using a configurable computer system comprising an allocation generator and a measurement subsystem.

56. (Previously Presented) The method of claim 55, wherein comparing the scheduled completion date with the requested completion date for each selected item order is performed by the allocation generator.

57. (Previously Presented) The method of claim 55, wherein deriving a customer service measurement is performed by the customer measurement subsystem.

58. (Previously Presented) The method of claim 54, wherein the value of the item order is determined by multiplying a number of late item orders by a unit price per item order, then subtracting any commission and discount.

59. (Previously Presented) The method of claim 54, further comprising the step of:

determining an overall customer service measurement based on the customer service measurement for each item order.

60. (Previously Presented) The method of claim 59, further comprising the step of:  
reporting the overall customer service measurement as the overall customer service  
measurement for that scheduling operation.
61. (Previously Presented) The method of claim 59, further comprising:  
displaying the customer service measurement on a calendar showing the total  
customer service measurement for a predetermined time period.
62. (Previously Presented) The method of claim 59, further comprising repeating said  
receiving, scheduling, selecting, comparing, deriving, and determining for different schedules  
to determine the customer service impact of schedule changes.
63. (Previously Presented) The method of claim 62, further comprising:  
selecting one or more customers; and  
determining a customer service measurement for each of the selected customers based  
on the customer service measurement for each item order of the selected customer.
64. (Previously Presented) The method of claim 54, further comprising the step of:  
determining a customer service measurement for a first customer and a second  
customer, based on the customer service measurement for each item order from each of the  
first and the second customers.
65. (Previously Presented) The method of claim 64 further comprising the step of:  
displaying the customer service measurement on a calendar showing the total  
customer service measurement for a predetermined time period.

66. (Previously Presented) The method of claim 64, further comprising repeating said receiving, scheduling, selecting, comparing and determining for different schedules to determine the customer service impact of schedule changes.
67. (Previously Presented) The method of claim 54, wherein said generating a demand array comprises generating a demand array of unshipped customer line items.
68. (Previously Presented) The method of claim 67, wherein said generating a supply array comprises generating a supply array of at least one of inventory work orders and manufactured inventory.
69. (Previously Presented) The method of claim 67, further comprising the step of:  
identifying a subset of work orders having a customer service measurement greater than a predetermined threshold;  
performing at least one of a utilization, contention, and material constraint inquiry on the subset of work orders.
70. (Previously Presented) The method of claim 69, wherein:  
the utilization inquiry involves identifying resources having a highest load/capacity ratio during a specified time period;  
the contention inquiry involves identifying resources allocated most frequently in scheduling; and  
the material limitation inquiry involves identifying material items causing scheduling delay.

71. (Previously Presented) The method of claim 69, further comprising the step of:  
identifying as a potential bottleneck a material or resource having the greatest result in  
the at least one of a utilization, contention, and material constraint inquiry.
72. (Previously Presented) A computer-implemented method for determining customer  
service impact of scheduling changes, comprising:  
receiving customer line item orders, each having a requested completion date,  
wherein each customer line item is an individual customer requested product for purchase;  
scheduling a scheduled completion date for each line item order;  
selecting at least one line item order;  
comparing by a allocation generator the scheduled completion date with the  
requested completion date for each selected line item order;  
deriving by a measurement subsystem a customer service measurement for  
each selected line item order based on said comparing;  
identifying a subset of line item orders having a customer service  
measurement greater than a predetermined threshold; and  
performing at least one of a utilization, contention, and material limitation  
inquiry on the subset of line item orders to identify a cause of the customer service  
measurement being greater than the predetermined threshold, wherein:  
the utilization inquiry involves identifying resources having a highest  
load/capacity ratio during a specified time period;  
the contention inquiry involves identifying resources allocated most  
frequently in scheduling; and  
the material limitation inquiry involves identifying material items  
causing scheduling delay.
73. (Previously Presented) A computer-implemented method for determining customer  
service impact of scheduling changes, comprising:  
receiving item orders having a requested completion date;  
scheduling a scheduled completion date for each item order;

selecting at least one item order, each item order having a scheduled completion date; comparing by an allocation generator the scheduled completion date with the requested completion date for each selected item order, wherein said comparing comprises:

generating a demand array of item orders;

generating a supply array of manufacturing inventory;

selecting an item order in the demand array;

matching manufacturing inventory in the supply array with the selected item order; and,

comparing the scheduled completion date of an item in the supply array with the requested completion date for the matched item in the demand array; and

deriving by a measurement subsystem a customer service measurement for each selected item order based on said comparing, the customer service measurement comprising a measurement of at least one of time and money;

identifying a subset of work orders having a customer service measurement greater than a predetermined threshold; and

performing at least one of a utilization, contention, and material constraint inquiry on the subset of work orders.

74. (Previously Presented) The method of claim 73, wherein:  
the utilization inquiry involves identifying resources having a highest load/capacity ratio during a specified time period;
- the contention inquiry involves identifying resources allocated most frequently in scheduling; and
- the material limitation inquiry involves identifying material items causing scheduling delay.

75. (Previously Presented) The method of claim 74, further comprising:  
identifying as a potential bottleneck a material or resource having the greatest result in  
the at least one of a utilization, contention, and material constraint inquiry.

76. (Previously Presented) A computer-implemented method for quantitatively  
determining customer service impact of scheduling changes, wherein the method is  
implemented using a configurable computer system comprising an allocation generator and a  
measurement subsystem, the method comprising:

receiving customer line item orders, each having a requested completion date,  
wherein each customer line item is an individual customer requested product for purchase;

scheduling a scheduled completion date for each item order;

selecting at least one item order, each item order having a scheduled  
completion date;

comparing by the allocation generator the scheduled completion date with the  
requested completion date for each selected item order, wherein said comparing comprises:

generating a demand array of item orders;

generating a supply array of manufacturing inventory;

selecting an item order in the demand array;

matching manufacturing inventory in the supply array with the selected item  
order; and

comparing the scheduled completion date of an item in the supply array with  
the requested completion date for the matched item in the demand array; and

deriving by the measurement subsystem a customer service measurement for  
each selected item order based on said comparing, wherein the customer service  
measurement represents values calculated based on one or more formulas selected from the  
group consisting of:

the amount of time difference between the requested completion date and a  
scheduled completion date multiplied by the value of the item order and multiplied by  
a predetermined interest rate;

a value of a late item order, determined by multiplying a number of late item orders by a unit price per item order, then subtracting any commission and discount; and

a value-time late, determined by multiplying a time difference between the requested completion date and the scheduled completion date multiplied by a value of the item order.

77. (Previously Presented) A system for quantitatively determining customer service impact of scheduling changes, comprising:

a receiver for receiving customer line item orders, each having a requested completion date, wherein each customer line item is an individual customer requested product for purchase;

a scheduler for scheduling a scheduled completion date for each item order;

a selector for selecting at least one item order, each item order having a scheduled completion date;

a comparator for comparing the scheduled completion date with the requested completion date for the selected item orders, wherein the comparator further comprises:

a first generator for generating a demand array of item orders;

a second generator generating a supply array of manufacturing inventory;

a selector for selecting an item order in the demand array;

a matching subsystem for matching manufacturing inventory in the supply array with the selected item order;

a comparator for comparing the scheduled completion date of an item in the supply array with the requested completion date for the matched item in the demand array; and

a measurement subsystem for deriving a customer service measurement for each selected item order based on said comparing, wherein the

customer service measurement represents values calculated based on one or more formulas selected from the group consisting of:

the amount of time difference between the requested completion date and a scheduled completion date multiplied by the value of the item order and multiplied by a predetermined interest rate;

a value of a late item order, determined by multiplying a number of late item orders by a unit price per item order, then subtracting any commission and discount; and

a value-time late, determined by multiplying a time difference between the requested completion date and the scheduled completion date multiplied by a value of the item order.

78. (Previously Presented) The system of claim 77, further comprising:

a summer for determining an overall customer service measurement based on the customer service measurement for each item order.

79. (Previously Presented) The system of claim 77, further comprising:

a display for reporting the overall customer service measurement as the overall customer service measurement for that scheduling operation.

80. (Previously Presented) The system of claim 77, further comprising:

a first display for displaying the customer service measurement on a calendar showing the total customer service measurement for a predetermined time period.

81. (Previously Presented) The system of claim 80, further comprising

a second display for displaying the customer service measurement of different schedules to determine the customer service impact of schedule changes.

82. (Previously Presented) The system of claim 81, further comprising:  
a third display for selecting one or more customers; and  
determining by the measurement subsystem a customer service measurement for each of the selected customers based on the customer service measurement for each item order of the selected customer.
83. (Previously Presented) The system of claim 77, further comprising:  
a first display for displaying a customer service measurement determining by the measurement subsystem for a first customer and a second customer, based on the customer service measurement for each item order from each of the first and the second customers.
84. (Previously Presented) The system of claim 83 further comprising:  
a second display for displaying the customer service measurement on a calendar showing the total customer service measurement for a predetermined time period.
85. (Previously Presented) The system of claim 77, further comprising a first generator generating a demand array comprises generating a demand array of unshipped customer line items.
86. (Previously Presented) The system of claim 77, further comprising a second generator generating a supply array comprises generating a supply array of at least one of inventory work orders and manufactured inventory.